

First Undergraduate Online Course in Mechanical Engineering at SDSU Through D2L

ME241: Engineering Materials

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South Dakota State University

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Presentation Outlines

- 1. Introduction**
- 2. Multi-media Resources**
- 3. Students' Engagement**
- 4. Course Assessment**
- 5. Conclusions**
- 6. Acknowledgement**

1. INTRODUCTION

5 challenges to enhance teaching and learning for Generation Y:

- Creating learning environments that promote active learning, critical thinking, collaborative learning, and knowledge creation.
- Developing 21st century literacy (information, digital, and visual) among students and faculty.
- Reaching and engaging today's learners.
- Encouraging faculty adoption and innovation in teaching and learning with IT.
- Advancing innovation in teaching and learning with technology in an era of budget cuts.

The plan for South Dakota State University embraces the pedagogical challenge of educating the Generation Y, 21st Century learners. The essential elements of the plan are:

- Create the AL Cloud that enables the active teaching-learning environment (wifi, classroom, devices, virtualization).
- Establish student centered, faculty engage active learning environments based on curricula uniqueness (4-year implementation).
- Empower faculty through in-service programs with the insight, tools and savvy to adopt cutting edge discipline specific pedagogies that will ensure active learning environments (services through Cloud).
- Secure a sustainable resource base to implement and maintain the plan (funding).
- Demonstrate accountability and evaluate the plan outcome (assessment).

- College of Engineering benefiting
- Mechanical Engineering at South Dakota State University is one of the largest undergraduate programs on campus with around 320 undergraduate students enrolled in 2011.
- The Comfort Enrollment of Mechanical Engineering Program is 240, which is 80 students over the program comfort capacity.
- In order to improve the situation and effectively use the AL Cloud resource, one of the strategies is to develop blended/hybrid course learning and delivery.

- Challenges for teaching ME 241: Engineering Materials:
 - The topics, terminology, and even the way of thinking are new to most entry level students.
 - A standard science/engineering approach emphasizing formulae and numerical calculations can leave introductory-level students without a grasp of the basic principles of structure/property/ processing relationships that are at the core of the subject.
 - An understanding of many of the topics requires the visualizations of three-dimensional moving images or evolving processes that cannot be presented effectively using static illustrations.
 - Students, particularly non-materials science and engineering majors, find a traditional lecture series that builds from electrons to atoms to crystals, etc., difficult to absorb.
 - Students typically exit a lecture without real comprehension of what was presented, because they were not able to pass the information from working memory to long-term memory at a rate commensurate with the delivery rate.

2. MULTI-MEDIA RESOURCES

Your Course Home

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 https://d2l.sdbor.edu/d2l/orgTools/ouHome/ouHome.asp?d2l_stateScope=...
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SDSU Getting Started

[Course Syllabus](#)
[Your Professor](#)
[Standards of Conduct](#)
[Technical Requirements](#)

Events

Today
 8:00 AM [Topic: Self-Test Quiz - available](#)

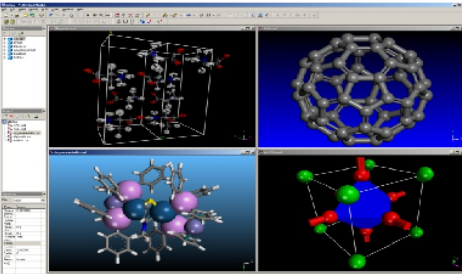
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SDSU Course Info



ME 241: Engineering Materials

Mechanical Engineering, College of Engineering, SDSU
 Instructor: Zhong Hu, Ph.D.
 Office: Crothers Engineering Hall (CEH222)
 Phone: (605) 688-4817
 E-mail: Zhong.Hu@sdstate.edu
 (All references to time are Central Time Zone.)

News

Assignment No.4 is ready.
 Posted Sep 17, 2008
 Assignment No.4 is ready. Due on Sept.22.

Discuss forum
 Posted Sep 17, 2008
 Please go to Discuss forum to originate your question and discussion topic and try to answer the question posted by other, this activities will strengthen your understanding, **and is also part of your credits towards to your final grade.**

Each chapter, at lease everyone should originate one question and reply one question.

The first self-test quiz is ready.
 Sep 16, 12:55PM

Updates

1 [Quizzes Not Attempted](#)

Role Switch

You are currently viewing this page as **Univ Student**.
Note: Once you navigate to another Course (or to My Home), you will automatically return to your active role.
 Current:
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Your Professor

WebPage of Dr. Zhong Hu - Windows Internet Explorer

http://teach.sdstate.edu/users/zhong_hu/

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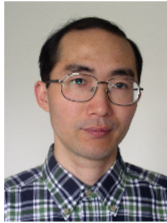
Course Teaching

Research Projects

Publication and Prese

My Family

Useful Links



Zhong Hu, Ph.D.
Associate Professor

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South Dakota State University
Center for Accelerated Applications at the Nanoscale and Photo-Activated Nanostructured Systems, South Dakota
Brookings, SD 57007
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Fax: (605) 688-5878
Email: Zhong.Hu@sdstate.edu
Web Site: http://teach.sdstate.edu/users/Zhong_Hu/

Areas of Research interests, industrial experience and teaching activities:

- (1) Computer Simulation Techniques:
 - (i) Finite Element Method;
 - (ii) Mesoscale Modeling;
 - (iii) Quantum Mechanics/Molecular Modeling.
- (2) Materials Science and Engineering:
 - (i) Advanced Materials Processing Technology: Metal Forming, Laser Forming, Net Shape Forming, Pipe Bending, etc;
 - (ii) Materials Nanoscale Structure-Property Modeling;
 - (iii) Photovoltaic Materials;
 - (iv) Product Design/Optimization;
 - (v) Polymers Injection Molding;
 - (vi) Composite Structure optimization and property prediction; Composite Forming.
- (3) Mechanics:
 - (i) Elasto-Plasticity;
 - (ii) Advanced Strength and Failure Theory;
 - (iii) Dynamics.
- (4) Mechanical Engineering:
 - (i) Fundamentals of Machine Design;
 - (ii) Kinematics and Dynamics of Machinery;
 - (iii) Strength Design and Failure Evaluation of Machinery;
 - (iv) Automatic Control.

AccuWeather.com®
Brookings, SD
Currently: [Hourly Info](#) | [15 Days](#) | [Videos](#)
Mostly cloudy RealFeel®: 62°F
66°F Winds: SE at 24 mph

Your Syllabus

South Dakota Board of Regents :: Windows Internet Explorer

https://d2l.sdstate.edu/d2l/orgTools/ouHome/ouHome.asp?d2l_stateScopes=OrgUnitSession~GridPageNum~Search~PageNum%5EOrgUnitUser~LCS~MyCoursesStateGroup%5EUser~Grid~PageSize~Html

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ME 241-S01: Engineering Materials (3 Credits)
South Dakota State University
Fall 2008
Mon.-Wed.-Fri. 1:00-1:50PM at SCEA 249

Instructor's Contact Information

Name: Dr. Zhong Hu
Office: CEH 222
Office hours: Monday to Friday 4:00 – 5:00PM
Office phone number: 688-4817
E-mail address: Zhong.Hu@sdstate.edu

Course Description

Catalog description: Structure of materials, including structure in nanoscale, such as atoms, perfect and imperfect crystals and phases, and non-crystals. Diffusion mechanisms. Mechanical properties of metals, and dislocations and strengthening mechanisms. Failure theory. Phase diagram and phase transformations in metals, including development of microstructure and alternation of mechanical properties. Applications and processing of metal alloys, ceramics, polymers and composites.

Course Prerequisites

Previous courses/experience: Math 123, Chem 112.
Technology skills (<http://learn.sdstate.edu/online/require.htm>)

Description of Instructional Methods

The course instructional methods in this semester are in the transition period. This course will involve class lectures, presentations, discussions, experiments, videos, and on-site tour, with D2L enhancement. We will deliver all the formal lectures in the class as usual, and you may also find the course contents, self-tests, assignments, announcements, your grades, and a lot of relevant information on the D2L. It can be accessed through the internet from computer labs or from your personal computer at <http://d2l.sdstate.edu>.

Technical Support: Helpdesk 605-688-6776 or SDSU_supportdesk@sdstate.edu, or website at <http://www3.sdstate.edu/TechnologySupport/InformationTechnologyServices/>.

Distance Education Support: <http://distance.sdstate.edu>.

Course Requirements

Required textbook and other materials (SDSU Bookstore: <http://bookstore.sdstate.edu>): Foundations of Materials Science and Engineering, 4th ed, 2006, by Smith and Hashemi, ISBN 0-07-295358-6 (McGraw Hill).
Class attendance is **highly recommended** but will not be graded, however, as the transition period of an online course, students are responsible for all material presented in the classes, i.e., announcements, assignments, quizzes, tests, etc. Online contents
Cheating and plagiarism policy: Refer to the student handbook. (http://studentaffairs.sdstate.edu/JudicialAffairs/StudentCode/SDSU_Student_Code.pdf)
Make-up policy: If a quiz, a test, or an assignment is missed, the grade score will be recorded as zero except in the event of an illness or serious emergency. In general, no excuse will be valid without contacting the instructor prior to the

Your Content Details

Definitions and Terminologies

Anion	an ion with a negative charge.
Atom	the basic unit of an element that can undergo chemical change.
Atomic mass unit (amu)	mass unit based on the mass of exactly 12 for ^{12}C .
Atomic number	the number of protons in the nucleus of an atom of an element.
Atomic orbital	the region in space about the nucleus of an atom in which an electron with a given set of quantum numbers is most likely to be found. An atomic orbital is also associated with a certain energy level.
Avogadro's number	6.023×10^{23} atoms/mol; the number of atoms in one relative gram-mole of an element.
Cation	an ion with a positive charge.

primary bond resulting from the sharing of electrons. In most cases the covalent bond involves the overlapping of half-filled orbitals of two atoms. It is a directional bond. An example of a covalently bonded material is diamond.
 the distribution of all the electrons in an atom according to their atomic orbitals.
 group of electrons with the same principal quantum number n .

1-2 Historical Perspective

Every segment of our everyday lives is influenced to one degree or another by technology. The development and advancement of societies have been intimately tied to the ability to produce and manipulate materials to fill their needs. In fact, early societies have been designated by the level of their materials development.



Hand Pump — Wood (Left)



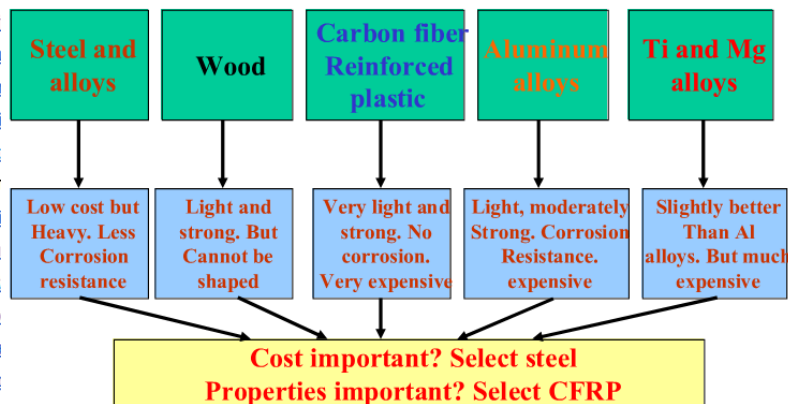
Wheel Barrow (Right)

The Wheel barrow: China, First Century BC. The oldest surviving picture, a frieze relief from a tomb-shrine in Szechuan province, dates from about 118 AD.

20/20 An endless circulating chain bearing square pallets which hold water, earth, or sand. According to some historical articles, it's around the first century BC.

Case Study – Material Selection

• **Problem:** Select suitable material for bicycle frame and fork.



Course Home | Content | Links | Discuss



Table of Contents



Print



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Last Topic Visited

Table of Contents

Search For:

Search

[Show Search Options](#)

Unit1. Course Content

i. Chapter 1: Intro

I. [Objectiv](#)

II. [1.1 Int](#)

III. [1.2 Hi](#)

IV. [1.3 Ma](#)

V. [1.4 Ma](#)

VI. [1-5 Fi](#)

VII. [Sum](#)

VIII. [Defi](#)

IX. [Chapt](#)

ii. Chapter 2: Ator

I. [Objecti](#)

II. [2.1 Int](#)

III. [2.2 A](#)

IV. [2.3 El](#)

V. [2.4 Th](#)

VI. [2.5 Bc](#)

VII. [2.6 P](#)

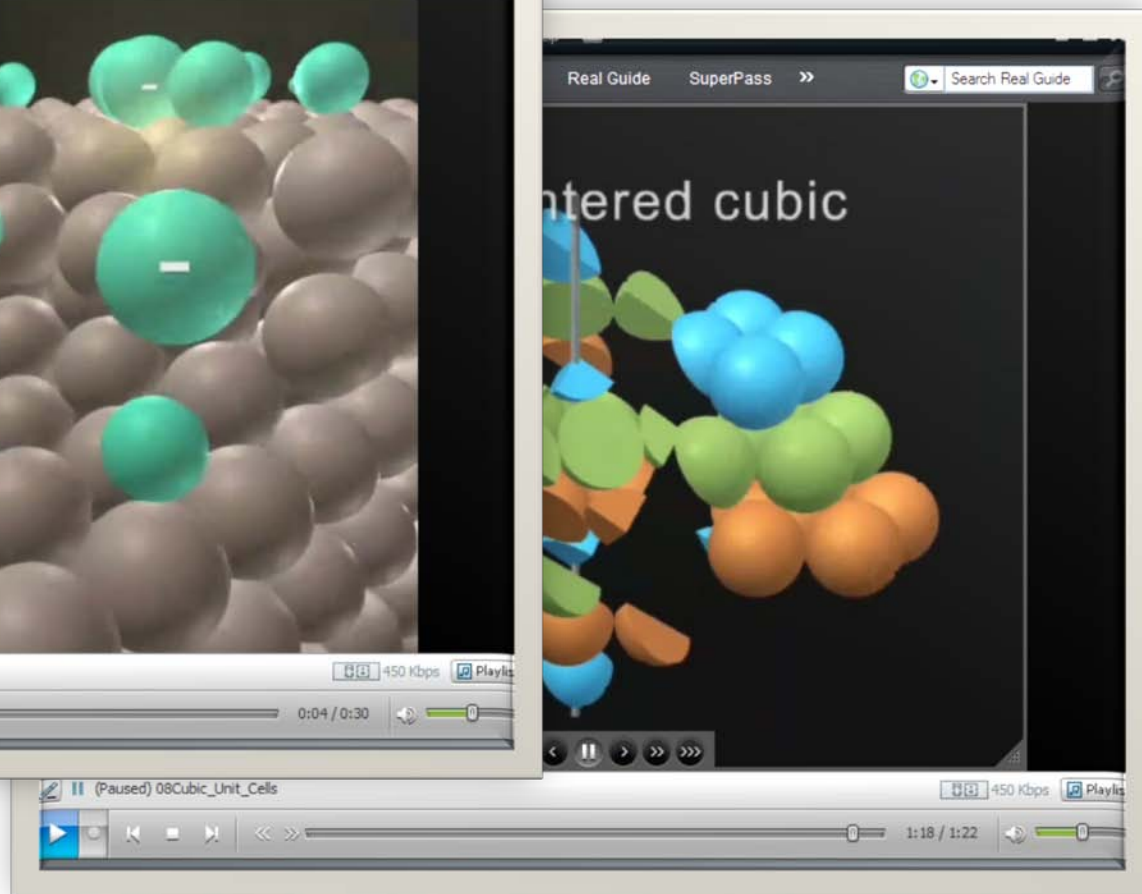
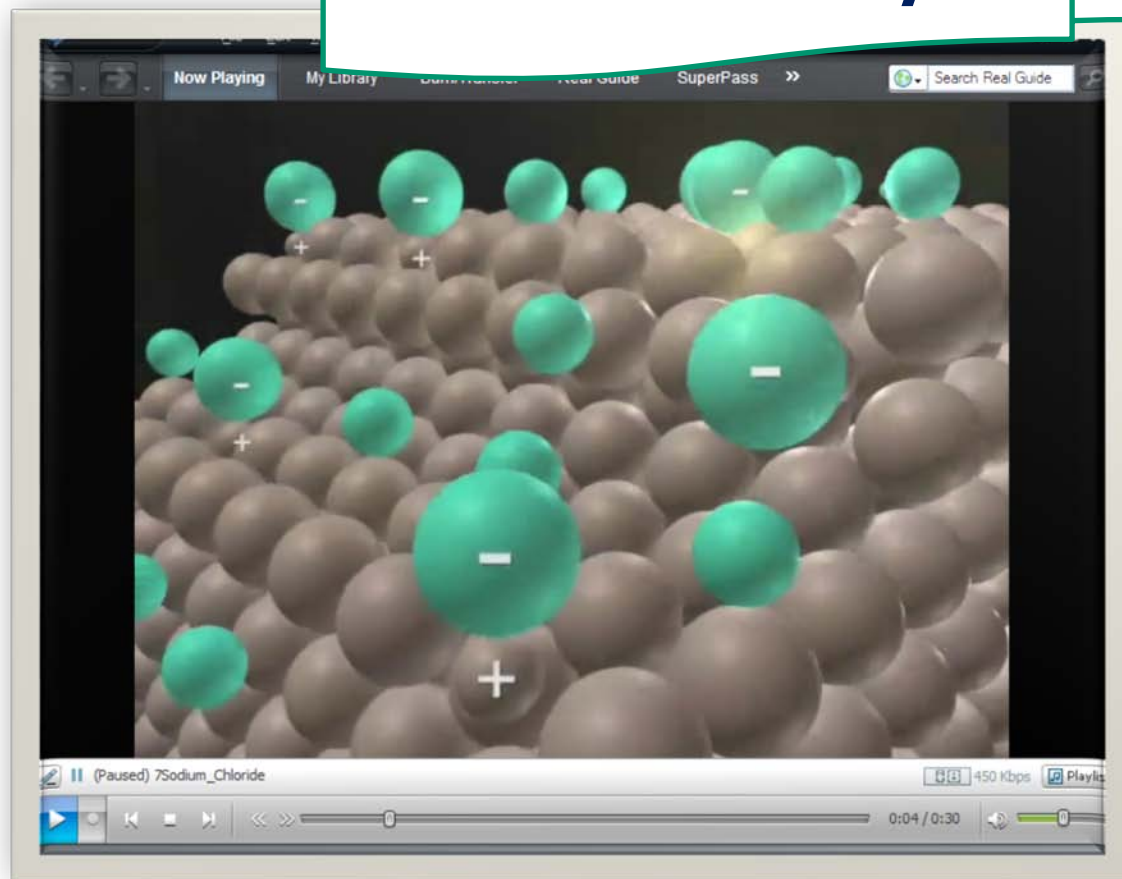
VIII. [2.7](#)

IX. [2.8 Mixed Bonding](#)

X. [Summary](#)


XI. [Definitions](#)

Your Video Clips



Your Web links

Course Home | Conte

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	Category: <input type="text" value="View All Categories"/>
	Publisher for textbook
	McGraw Hill Publisher for the textbook.
	Professional Societies
	American Society for Engineering Education American Society for Mechanical Engineers The Materials Information Society American Plastics Council American Society for Nondestructive Testing Association of American Ceramic Component Manufacturers American Ceramics Society The American National Standards Institute The National Aeronautics and Space Administration Society of Plastics Engineers The Minerals, Metals and Materials Society
	Other Useful Links
	Good reference site for engineering students Materials Science Center Site on crystal structures Information on elements of periodic table Information on materials, properties and applications Information on stainless steel Gallery of materials

3. STUDENTS' ENGAGEMENT

Your News Board

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Undergraduate Engineering Help (CH444)
Phone: (605) 688-4817
E-mail: Zhong.Hu@sdstate.edu
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News

Assignment No.6 is ready.
Posted Sep 22, 2008
Assignment No.6 is ready. The due date is Sept.29.

Assignment No.3 Due this night.
Posted Sep 19, 2008
Assignment No.3 Due this night. Please submit it online. Also don't forget to take the online self-test quiz No.1 (expire sept.21), which will be count for the final grade.

No face-to-face lecture on this Friday and the ...
Posted Sep 19, 2008
No face-to-face lecture on this Friday and the following days until the first midterm test. I will post the date for the test. Before the first midterm test, there will be self-test quiz No.2 covering chapter three starting soon.

Take self-test quiz and participate in the disc...
Posted Sep 18, 2008
Everyone is required to take self-test quiz and participate in the discuss forum. They are all count for final grade (quizzes 20% and discuss 5% in the final grade percentage). For each chapter, everyone needs at least to originate a question and answer(reply) one question for full credits.

Assignment No.5.
Posted Sep 18, 2008
Please read chapter three sections 3.5, 3.6, 3.7 and 3.8 from d2l and corresponding contents from the textbook. Assignment No.5 will be ready soon. 3.9 in d2l is reading material, not for test.

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Student Guides
To help you with any instructor related questions, please feel free to read the [Faculty User Guides](#).
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- Calendar
- Public Schedules
- Settings

Date Picker

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Today

Calendar

Calendar New Event Export Import Search Events

Display Options Quick Add Print

Month View

Day Week Month

September 2008

Sunday	Monday	Tuesday	Wednesday
Aug 31	Sep 1 All Day Labor Day (Holiday)	2 All Day Orientation	3 1:00 PM Face-to-Face
		8:00 AM Module: Chapter 1: Introduction to Materials Science and Engineering - available	1:00 PM First Class
		10:38 AM Topic: Objectives - available	
		10:39 AM Topic: 1.1 Introduction - available	
		10:40 AM Topic: 1.2 Historical Perspective - available	

Week View

Day Week Month

Sunday, September 7, 2008 - Saturday, September 13, 2008

Sunday, Sep 7, 2008	Monday, Sep 8, 2008	Tuesday, Sep 9, 2008	Wednesday, Sep 10, 2008	Thursday, Sep 11, 2008
All Day First Class: Introduction of Engineering Materials.	All Day First Class: Introduction of Engineering Materials.	All Day First Class: Introduction of Engineering Materials.	12:00 AM - 10:00 AM First Class: Introduction of Engineering Materials.	
10:44 AM Topic: 2.3 Electronic Structure of Atoms - available		9:45 AM Topic: 2.5 Bonding Forces and Energies - available	8:00 AM Quizzes: Chapter 2 Self-test quiz - available	
10:44 AM Topic: 2.4 The Periodic Table - available		9:46 AM Topic: 2.6 Primary Interatomic Bonds - available	10:46 AM Topic: 2.7 Secondary Bonding - available	
			10:47 AM Topic: 2.8 Mixed Bonding - available	
			10:47 AM Topic: Definitions - available	
			10:47 AM Topic: Summary - available	
			10:48 AM Topic: Chapter 2 PowerPoint - available	

Your Assignments

Folder List New Folder

Dropbox Folders

Folder	Total Files	Unread Files	Flagged Files	Actions
Assignments				
Assignment No.1	36	0	0	
Assignment No.2	30	0	0	
Assignment No.3	35	1	0	
Assignment No.4	31	0	0	
Assignment No.5	41	0	0	
Assignment No.6	32	0	0	
Assignment No.7	6	6	0	
Assignment No.8	1	1	0	

20 per page

Apply

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First Submission after

September 9 2008 Now

First Submission before

September 16 2008 Now

everyone

50 per page

Files	Submission Date	Delete
1_BA.doc (289.5 KB)	Sep 12, 2008 1:37 PM	
Assignment1.docx (121.69 KB)	Sep 12, 2008 4:56 PM	

Leave Feedback

Leave Feedback

Leave Feedback

$$\frac{(1.6 \times 10^{-19} \text{ C})^2}{(4\pi)(8.85 \times 10^{-12} \text{ C}^2/\text{N} \cdot \text{m}^2)[(0.196 + 0.133) \times 10^{-9} \text{ m}]^2}$$

2-39. Calculate the net potential energy for K^+Br^- pair by using the b constant calculated from problem 2.37.

From equation 2.8:

$$E_{\text{net}} = \frac{+Z_1 Z_2 e^2}{4\pi \epsilon_0 a} + \frac{b}{a^n}$$

$$2.12665 \times 10^{-19} \text{ J} = \frac{9.5b}{(3.28 \times 10^{-10} \text{ m})^{10.5}} \quad b = 5.84316 \times 10^{-110}$$

$$\frac{(+1)(-1)(1.6 \times 10^{-19} \text{ C})^2}{4\pi(8.85 \times 10^{-12} \text{ C}^2/\text{N} \cdot \text{m}^2)(3.28 \times 10^{-10} \text{ m})} + \frac{(5.843 \times 10^{-110} \text{ N} \cdot \text{m}^{10})}{(3.28 \times 10^{-10} \text{ m})^{9.5}} = E_{\text{K}^+\text{Br}^-} = -6.28 \times 10^{-19} \text{ J}$$

Your Discussion Forums

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Electron orbitals and spdf electron configurations.

Back to Forums & Topics List

Compose Refresh Mark All Read Show Search Settings View: Threaded Apply

Please discuss any questions related to the above topic.

20 per page

Subject	Authored By	Date
Bond energies	Tyler Brockel	Sep 21, 2008 8:29 PM
Re: Bond energies	Zhong Hu	Sep 22, 2008 8:44 AM
L and M shells?	Rachel Duncanson	Sep 21, 2008 1:20 PM

View Message

View Message Reply Edit Message Copy History

Delete Previous Next

Re: Outer shell of electrons completely filled
Zhong Hu Sep 22, 2008 8:52 AM

That is right, for any element, the max number of electrons in the outer most shell is 8 except the when n=1 such as He, the max number of electrons in the outer most shell has only 2 electrons. This is determined by the energy states in which electrons usually first fill the lower level.

<<< Replied to message below >>>
Authored by: Rachel Duncanson
Authored on: Sep 21, 2008 1:17 PM
Subject: Re: Outer shell of electrons completely filled

I looked at the periodic table and selected an element in the column next to the noble gases. i.e. I.

<<< Replied to message below >>>
Authored by: Mathew Stahl
Authored on: Sep 20, 2008 8:25 PM
Subject: Re: Outer shell of electrons completely filled

<<< Replied to message below >>>
Authored by: Alexis Narvaez
Authored on: Sep 20, 2008 3:16 PM
Subject: Outer shell of electrons completely filled

How can you now which one of these elements: Cr, I, Li is one electron short of having its outer shell of electrons completely filled?? Cr = [Ar]3d5 4s1 I = [Kr]4d10 5s2 5p5 Li = 1s2 2s1

All of them are missing one electron in the outer shell.. or not?

Please help.

Your Email Box

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Inbox (7)
Sent Mail
Drafts
Trash
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Filter By: ME-241-S01-2008FA
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Search For: Search Show Search Options

20 per page

	From	Subject	Date	Size
	Kevin Hammer <kwhammer...>	sorry ME homework is a tiny bit ...	Sep 25, 2008 12:12 AM	4056.7 KB
	Kevin Hammer <kwhammer...>	RE: ME 241 S01 help ignore previ...	Sep 19, 2008 3:11 PM	0.1 KB
	Kevin Hammer <kwhammer...>	RE: ME 241 S01 help	Sep 19, 2008 3:09 PM	0.3 KB
	Nicholas Sand <npsand@...>	RE: <No Subject>	Sep 18, 2008 11:28 AM	0.3 KB
	Nicholas Sand <npsand@...>	RE: <No Subject>	Sep 16, 2008 4:40 PM	0.2 KB
	Morgan Kleinsasser <ma...>	word documents	Sep 14, 2008 11:24 PM	0.1 KB
	Kevin Hammer <kwhammer...>	ME 241 S01 help	Sep 10, 2008 6:55 PM	0.5 KB

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 Change Course Offering Association

Move To: (None) Flag: None

Course Offering: ME-241-S01-2008FA
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GE 001, FE Exam Tutorial
Received: Sep 18, 2008 11:28 AM

From: Nicholas Sand <npsand@d2l.sdbor.edu>
To: zhu@d2l.sdbor.edu
Subject: RE: <No Subject>

Message

Mr. Hu,

Two nights ago, I submitted assignment one and two in Word formats. Yesterday, I got an email informing me that the message was delayed from being sent, and I just wanted to know whether or not you received my submissions. I am sorry about the confusion and delays,

Nick

4. COURSE ASSESSMENT

Your Quiz

M

/ 1 (autograded)

[question feedback](#)

question feedback has been set

Chapter 2

Est. Length: 0:50:00

Time Taken: 0 min

Quiz Info

Zhong Hu

Attempt 1

Questions

Page 1:



Legend

- Saved Response
- Unsaved Response
- Info Item

Quiz Status

Quiz Started

Please Note: It is recomm

Question 1

The nucleus of an atom co

- ☐ A. Protons
- ☐ B. Electrons
- ☐ C. Neutrons
- ☐ D. All of the above
- ☐ E. Both A and C

Question 2

What type(s) of electron su

- ☐ d
- ☐ p
- ☐ f
- ☐ s
- ☐ s and f
- ☐ s and p
- ☐ All of the above

Question 2

What type(s) of electron subshell(s) does an *L* shell contain?

- ☐ d
- ☐ p
- ☐ f
- ☐ s
- ☐ s and f
- ☒ s and p
- ☐ All of the above

Save Time: 3:35 PM

Score: / 1 (autograded) [Expand question feedback](#)

question feedback has been set

Question 3

How many atoms or molecules are there in a mole of a substance?

- ☐ 6.023×10^{-23}
- ☒ 6.023×10^{23}
- ☐ 1.66×10^{23}
- ☐ 1
- ☐ 1.66×10^{-23}

Save Time: 3:35 PM

Score: / 1 (autograded) [Expand question feedback](#)

question feedback has been set

Question 4

What is the *maximum* number of electrons that an *M* shell may contain?

- ☒ 18
- ☐ 8
- ☐ 2
- ☐ 32

Save Time: 3:35 PM

Score: / 1 (autograded) [Expand question feedback](#)

Your Test

(Totally 26 multi-choice problems)

- How many atoms are there in 100 g of gold? ($N_A = 6.023 \times 10^{23}$ atoms/mol, $A_{Au} = 196.97$ g/mol)
 - ☐ (a) 196.97×100 atoms
 - ☐ (b) $0.5077 \times 6.023 \times 10^{23}$ atoms
 - ☐ (c) 6.023×10^{23} atoms
 - ☐ (d) $100 \times 6.023 \times 10^{23}$ atoms
- A monel alloy consists of 70 wt% Ni and 30 wt% Cu. What are the atomic percentages of Ni and Cu in this alloy? ($A_{Ni} = 58.69$ g/mol, $A_{Cu} = 63.55$ g/mol)
 - ☐ (a) 30 at% Ni, 70 at% Cu
 - ☐ (b) 58.69 at% Ni, 63.55 at% Cu
 - ☐ (c) 71.6 at% Ni, 28.4 at% Cu
 - ☐ (d) 70 at% Ni, 30 at% Cu
- Calculate the energy in joules of the proton whose wave length is 303.4 nm. ($\Delta E = h\nu$, Plank's constant $h = 6.63 \times 10^{-34}$ J-s, the light velocity $c = 3.00 \times 10^8$ m/s)
 - ☐ (a) 6.71×10^{-40} J
 - ☐ (b) 6.71×10^{-32} J
 - ☐ (c) 6.56×10^{-28} J
 - ☐ (d) 6.56×10^{-19} J
- A hydrogen atom exists with its electron in the $n=6$ state. The electron undergoes a transition to the $n=2$ state. Calculate the frequency of the photon emitted. ($E_n = -13.6/n^2$ eV, $1 \text{ eV} = 1.60 \times 10^{-19}$ J)
 - ☐ (a) 4.6×10^{33} Hz
 - ☐ (b) 7.3×10^{14} Hz
 - ☐ (c) 7.3×10^{-5} Hz
 - ☐ (d) 4.6×10^{-5} Hz
- What is the maximum number of electrons that an $M(n=3)$ shell may contain?
 - ☐ (a) 2
 - ☐ (b) 8
 - ☐ (c) 18

Your Grades

ME-241-S01-2008FA
Engineering Materials-Hu

University ME-241-S01-2008FA
Engineering Materials-Hu

Quizzes | Classlist | Grades

st Name Quizzes

Self-test quiz 1 Self-test quiz 2 Self-test quiz 3

16 / 20, 80 % 13 / 20, 65 % 0* / 20, 0 %

11 / 20, 55 % 11 / 20, 55 % 0* / 20, 0 %

13 / 20, 65 % 11 / 20, 55 % 0* / 20, 0 %

16 / 20, 80 % 17.5 / 20, 87.5 % 0* / 20, 0 %

16 / 20, 80 % 12.5 / 20, 62.5 % 0* / 20, 0 %

hel 17 / 20, 85 % 12 / 20, 60 % 0* / 20, 0 %

16 / 20, 80 % 14.5 / 20, 72.5 % 0* / 20, 0 %

15 / 20, 75 % 17.5 / 20, 87.5 % 0* / 20, 0 %

15 / 20, 75 % 18 / 20, 90 % 0* / 20, 0 %

17 / 20, 85 % 15.5 / 20, 77.5 % 0* / 20, 0 %

st Name Quizzes

Self-test quiz 1 Self-test quiz 2 Self-test quiz 3

18 / 20, 90 % 14.5 / 20, 72.5 % 0* / 20, 0 %

17 / 20, 85 % 0* / 20, 0 % 0* / 20, 0 %

16 / 20, 80 % 11.83 / 20, 59.15 % 0* / 20, 0 %

gan 15 / 20, 75 % 17 / 20, 85 % 0* / 20, 0 %

16 / 20, 80 % 12.5 / 20, 62.5 % 0* / 20, 0 %

19 / 20, 95 % 15 / 20, 75 % 0* / 20, 0 %

16 / 20, 80 % 15.5 / 20, 77.5 % 0* / 20, 0 %

16 / 20, 80 % 15.5 / 20, 77.5 % 0* / 20, 0 %

16 / 20, 80 % 12.5 / 20, 62.5 % 0* / 20, 0 %

15 / 20, 75 % 13 / 20, 65 % 0* / 20, 0 %

st Name Quizzes

Self-test quiz 1 Self-test quiz 2 Self-test quiz 3

18 / 20, 90 % 14.5 / 20, 72.5 % 0* / 20, 0 %

17 / 20, 85 % 0* / 20, 0 % 0* / 20, 0 %

16 / 20, 80 % 11.83 / 20, 59.15 % 0* / 20, 0 %

gan 15 / 20, 75 % 17 / 20, 85 % 0* / 20, 0 %

16 / 20, 80 % 12.5 / 20, 62.5 % 0* / 20, 0 %

19 / 20, 95 % 15 / 20, 75 % 0* / 20, 0 %

16 / 20, 80 % 15.5 / 20, 77.5 % 0* / 20, 0 %

16 / 20, 80 % 15.5 / 20, 77.5 % 0* / 20, 0 %

16 / 20, 80 % 12.5 / 20, 62.5 % 0* / 20, 0 %

15 / 20, 75 % 13 / 20, 65 % 0* / 20, 0 %

Instructions

- The Grades tool is used to create grade items and schemes for measuring users' performance; record grades; and share a grade book and statistics with users.
- Use this page to view, create, edit, and delete grade items and categories.

Grade Item	Type	Association	Max. Points	Weight	Actions
Quizzes				20	
Self-test quiz 1	Numeric	Quizzes	20	20	
Self-test quiz 2	Numeric	Quizzes	20	20	
Self-test quiz 3	Numeric	Quizzes	20	20	
Self-test quiz 4	Numeric	Quizzes	20	20	
Self-test quiz 5	Numeric	Quizzes	20	20	
Assignments				10	
Assignment1	Numeric	Dropbox	40	12.5	
Assignment2	Numeric	Dropbox	30	12.5	
Assignment3	Numeric	Dropbox	35	12.5	
Assignment4	Numeric	Dropbox	25	12.5	
Assignment5	Numeric	Dropbox	90	12.5	
Assignment6	Numeric	Dropbox	50	12.5	
Assignment7	Numeric	Dropbox	10	12.5	
Assignment8	Numeric	Dropbox	35	12.5	
Midterm Tests				39	
Test 1	Numeric	-	100	33.33333333	
Test 2	Numeric	-	100	33.33333333	
Test 3	Numeric	-	100	33.33333333	
Final Exam				29	
Final Exam	Numeric	-	100	100	
On-Site Tour				2	
On-site tour	Numeric	-	100	100	

STUDENT SURVEY SUMMARY

Survey Items	Semesters		
	<i>Fall 2008</i>	<i>Spring 2009</i>	<i>Fall 2009</i>
Received/Sent Out Surveys	26/27	26/27	33/36
Do you have e-learning experience in the past?	Yes: 8 (31%) No: 18 (69%)	Yes: 6 (23%) No: 20 (77%)	Yes: 11(33%) No: 22(67%)
What was the most helpful thing about this delivery?	Flexibility: 14 Online resource:17	Flexibility: 14 Online resource:15	Flexibility:13 Online resource:21
What was the least helpful thing about this delivery?	Less f2f class & interaction:19 Others:9	Less f2f class & interaction:14 Others:13	Less f2f class & interaction:22 Others:11
What did you like about the way the course delivered?	Advantages of hybrid: 25 Others: 7	Advantages of hybrid: 25 Others: 4	Advantages of hybrid: 32 Others: 3
Be interested in taking other courses like this one?	Yes: 15 (58%) No: 3 (11%) Maybe: 8 (31%)	Yes: 8 (31%) No: 4 (15%) Maybe: 14 (54%)	Yes: 16 (48%) No: 3 (9%) Maybe: 14 (42%)
Was it more difficult to achieve better grades?	Yes: 14 (54%) No: 12 (46%)	Yes: 14 (54%) No: 12 (46%)	Yes: 17 (52%) No: 16 (48%)

5. CONCLUSIONS

- A hybrid or blended course requires careful pedagogical redesign, careful redesign of learning contents, learning process consideration, teaching methods and evaluation.
- South Dakota State University is developing an AL Cloud which makes blended/hybrid course redesign possible and more effective.
- This case study indicates that blended/hybrid learning provides a better ideology for the choice of learning methods when different e-learning tools are available for online and in-class dual environment.

6. ACKNOWLEDGMENTS

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Questions ?